Dalco Passage Mystery Spill, 14 October 2004

Lessons Learned Report

Prepared for the Washington State Department of Ecology

by

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LESSONS LEARNED

DALCO PASSAGE MYSTERY OIL SPILL
SOUTH PUGET SOUND, WASHINGTON
October 14, 2004

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Foreword By:
Washington State Department of Ecology

The Washington State Department of Ecology's Spill Prevention, Preparedness, and Response Program commissioned this report to capture the lessons learned from responding to this significant oil spill. Such spills are costly, and the learning opportunity comes at too high a premium to be lost without a thorough review and needed followup action. Prevention remains our top priority and we will examine all potential prevention measures when an investigation is completed.

What was rare about this spill response was its lack of a known Responsible Party (spiller) for a spill of its size. It was a mystery spill. As such, it breaks new ground for Ecology and provides us a chance to examine our spill response much as we would examine that of a private company responding to its spill. Through this evaluation and other initiatives we hope to make the most of it.

Finally, the content of this report represents the research and view of Genwest Systems, Inc. In publishing this report, Ecology has assisted with facts, advised as to the clarity of the language, and asked for deeper analysis of the early-hours decision not to act until morning. We have not altered this report's content. However, it is appropriate that we do comment on those lessons learned (limited to preparedness and response issues) which we find most significant and believe will carry the greatest potential for environmental benefit.

1. Black/Crude Oil Spill Reports Indicate Potentially Higher Volumes and More Serious Environmental Impacts: Reports carrying these descriptions should indicate to responders the higher likelihood of a significant spill and should be weighed when making notification and go/no-go decisions. Ecology should coordinate more closely with the U.S. Coast Guard when assessing the potential of spill reports and assign responsibilities typically performed by a Responsible Party's Initial Incident Commander (IIC). Since the Dalco Spill, Ecology has clarified and integrated additional criteria in our notification and go/no-go decision protocols.

2. Notification of Local Officials and Tribal Representatives Must Be Prompt and Followup Ensured: The initial task of notifying impacted local and tribal jurisdictions and other stakeholders is monumental. Early and ongoing communications are critical to keep other

personnel and the public safe and informed. To speed up initial notifications, Ecology is currently testing an automated system that will immediately contact preprogrammed telephones and pagers.

3. Tracking Oil at Night and Inclement Weather Conditions: Many of Washington's significant oil spills have occurred in darkness or bad weather. However, the region has not had extensive experience in performing reconnaissance to determine the extent of a spill, directing night time skimming, or positioning skimmers in darkness to begin operations at first light. This lost contact with the oil reduces successful recovery and results in more immediate and extensive beach impacts. Larger vessels with radar and spotlights, infrared imaging, and lighted tracking buoys are available and should be utilized. Ecology is researching and arranging access to these resources. Also, the 2004 Oil Spill Early Action Task Force has prepared a report and recommendations to improve early notification procedures, as well as response policies and procedures changes to the Northwest Area Contingency Plan.

4. Trained Volunteers Significantly Enhance an Oil Spill Response: Many of the Vashon/Maury Island residents were interested in assisting in the response effort. Due to safety regulations and a lack of training, equipment, and organized structure, the residents were frustrated in their attempt to help minimize the impacts to public and private natural resources. Ecology is currently developing a proposal that will outline a plan to assist local community leaders and groups in creating opportunities for citizen volunteers to become actively involved in the recognition, notification, assessment, and cleanup of future oil spills.

The Washington State Department of Ecology's Spill Prevention, Preparedness, and Response Program looks forward to taking advantage of this opportunity to improve our effectiveness by capturing lessons learned and implementing recommendations from this independent report, as well as other ongoing processes.

Ecology would like to thank the U.S. Coast Guard; the U.S. Navy; the Tacoma Fire Department; Clean Sound Cooperative; NRC Environmental Services; Global Diving & Salvage; Cowlitz Clean Sweep; Washington Conservation Corps; the Washington State Departments of Fish and Wildlife, Natural Resources, and Health; King and Pierce Counties D.E.M.; and all the other tribal, governmental, and private parties that participated in this spill response.

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Introduction

Under contract with the Washington Department of Ecology (WDOE), Spill Prevention, Preparedness & Response Program (SPPR), Genwest Systems Inc. was asked to review the response to the Dalco Passage mystery oil spill of October 14th, 2004, and prepare a report highlighting the potential lessons to be learned from this response, with a specific focus on the initial response phase. Notable issues identified in the course of this review are addressed here as lessons learned, successes and recommendations. The intent of this report is to most efficiently convey suggested improvements to the Washington State oil spill response community using terminology and referencing systems familiar to this group.

Appended to this report is an abridged chronology of the initial response which establishes at least some baseline of what information was available, at what time, and in what location, to support key early decisions. It is important to note that in any after-action assessment it is difficult, if not impossible, to totally ignore information learned after-the-fact, which can lead to an unfair critique of response actions. Every effort has been made here to focus on the decisions made and actions taken with reference to the specific knowledge and information available at that time and in that location.

In preparing this report, first hand observations were made and informal interviews were conducted with responders in the command post on October 15th and 16th. Pertinent Incident Command System (ICS) forms, photographs, WDOE Lessons-Learned forms, press releases, media reports, web sites and available personal notes were reviewed. With the goal of focusing on the lessons to be learned and the key decision points in this response, only a very brief summary of the spill and the response is provided as a part of this report. More detailed information is available in the appended chronology and in the response documentation referenced above. All times in this report, as well as the chronology, are given in Pacific Daylight Time (PDT) using a 24-hour clock.

There are on-going investigations being conducted by federal and state agencies to identify the party responsible for this spill. This report is not connected with nor does it draw upon any of the data specific to these investigations.

Executive Summary

This report focuses on lessons learned in three specific areas of the response to this spill: first the delays in the initial response; second the initial incident command; and third the longer term incident management and area planning considerations.

Delays: The first report of this spill came in at 0130 on October 14th from a tug boat operating in Dalco Passage. No one claimed responsibility for this spill. The Northwest Area Contingency Plan (NWACP) calls for an agency-led response in the event of a mystery spill. In a 0200 phone call, the WDOE and USCG duty officers decided to continue monitoring the situation and to assess the spill at first light, which delayed the initial assessment. The duty officers next spoke at 0800, one half hour after sunrise, and at that time neither agency had observers staged or deployed in the immediate spill area, which further delayed the initial assessment and thereby the mobilization of response resources. These delays in assessing the spill then delayed the notification of other jurisdictions and the call-out of response equipment. Neither of these decisions would be acceptable for a plan holder under the NWACP guidance.

> Key Recommendation: In responding to a mystery spill, agencies should react in accord with NWACP requirements and agency expectations of a responsible party.

Initial Incident Command: In this incident, there was neither a designated Initial Incident Commander (IIC) nor a recognized initial response organization staffing key positions (SO, Ops, PSC, LO, PIO) to most efficiently direct the notifications, assessments and the initial response.

> Key Recommendation: In responding to a mystery spill, agencies should immediately designate an IIC and staff to manage the initial response phase including assessment, notifications and resource call-out, as per standard ICS and DRILLTRAC training.

Incident Management and Area Planning: In any response there are lessons to be applied to ensure more effective future responses and also to review and update existing planning tools like the NWACP and Geographic Response Plans (GRPs).

> Key Recommendation: Review the GRPs with local communities and response contractors to establish local priorities and identify deployment feasibility and potential effectiveness.

Brief Initial Incident Summary

On Thursday morning, October 14th, 2004 at 0127 PDT the National Response Center (NRC) received a report of "an unknown sheen in Puget Sound / Commencement Bay". The sheen color was described as "dark black" with a "bunker / diesel" odor and the area was reported as "1,000 feet" in length and "200 feet" in width. More details from this initial report are in the abridged chronology appended to this report. The NRC notified US Coast Guard/Marine Safety Office (USCG/MSO) Puget Sound and the Washington Emergency Management Division (WEMD) at 0135. WEMD notified the Washington Department of Ecology (WDOE) duty officer at 0140. At the same time, USCG/MSO personnel contacted the reporting party on a tug boat transiting the area. The tug personnel "reported recoverable oil approximately 1 acre in size," although the actual size could not be observed due to darkness. As the tug traveled toward Commencement Bay, no oil was observed. The WDOE duty officer also called the tug to verify the report, receiving essentially the same report of "black oil covering at least an acre." Responding to a question from the WDOE duty officer, the tug also reported that there was no other ship traffic in the area. See the chronology for more details of these communications.

At approximately 0200 the WDOE duty officer called the USCG/MSO duty officer to discuss the situation and potential actions. Both duty officers agreed to continue monitoring for any further reports, to get a field assessment of the area at first light and to coordinate their assessment efforts. The Coast Guard's Vessel Tracking System (VTS) was contacted to ensure that any reports from vessels in the area would be forwarded to the USCG/MSO duty officer for action.

Sunrise on the 14th was forecast at 0728. At 0655 the Tacoma Narrows Airport was reporting zero visibility due to fog. The ferry *M/V Rhododendron* began making its 15-minute crossings between Tahlequah and Pt. Defiance at 0530 and by 0830 was reporting a 20 minute delay due to fog. From the appended chronology, there were no further reports of oil until approximately 0714 when the Coast Guard received a report from another tug confirming an oil slick in the vicinity of the 'TC' buoy. This report was relayed to the Ecology Duty Officer. The third report was at 0735 when a tug reported to the Coast Guard that oil had been sighted in vicinity of the Tahlequah ferry dock, but there was no estimate of size. Details of this report were also relayed to the WDOE duty officer and a conference call was set up between WDOE and USCG/MSO

staff at 0800. At this time, it was agreed that the Coast Guard would activate the National Response Corporation Environmental Services (NRCES) fast response vessel in Tacoma and that WDOE would arrange a helicopter for an overflight. Both of these efforts were focused on getting "experienced eyes" on the reported spill. Between 0800 and 0900, there were additional reports of oil sightings from the original reporting tug and from residents and others in the Quartermaster Harbor, Manzanita and Tahlequah areas. By 0815, the USCG had arranged for the deployment of the NRCES fast response vessel, and WDOE was informed that no overflight would be possible due to fog. Further notifications, interactions, observations and situation reports are recorded in the appended chronology.

With the confirmation of a significant mystery oil spill, though still an unknown quantity of an unknown product with an unknown distribution, the USCG/MSO and the WDOE spill response teams began calling out contractors between 0800 and 1100 on the morning of the 14th. All contractors responded quickly with available resources. Helicopter overflights were arranged and field observers dispatched as soon as safety considerations allowed. Before noon, priority protection strategies were identified in accord with the Geographic Response Plans (GRP), and contractors were directed to implement some of the highest priority GRP sites. Later in the day on the 14th, an Incident Command Post (ICP) was identified at the Tacoma Fire Training facility and state and federal agencies began staffing the ICP that afternoon. The Unified Command (UC) convened at the Tacoma ICP around 1800 that evening. An Incident Action Plan (IAP) was completed during the night of the 14th-15th. By the evening of the 15th, the Incident Command System (ICS) process and positions were in place and the response management systems were working smoothly.

The remainder of this report focuses on the specific lessons learned during the response to this mystery spill, highlighting successes and giving specific recommendations directed at future responses.

Response Review

Delays

The first report of this spill came in at 0130 on October 14th from a tug boat operating in Dalco Passage. No one claimed responsibility for this spill. While neither WDOE nor the U.S. Coast Guard were responsible for the original spill, the Northwest Area Contingency Plan (NWACP) calls for an agency-led response in the event of a mystery spill. At 0200 the WDOE and USCG duty officers conferred via phone after each had individually spoken to the tug operator who described black or recoverable oil covering at least an acre. Based on their interpretation of the available information, the duty officers made the decision to continue monitoring the situation and to assess the spill at first light. This decision delayed the assessment and would not meet the NWACP expectations for action by a responsible party.

Lesson: "Full and rapid response"

In the event of a mystery spill, the NWACP, which functions as the Washington State plan, mandates an agency-led "full and rapid response" as expected from a responsible party.

Recommendation: In the case of mystery spills where agency personnel must manage the initial response, rather than focusing on specific oil types or volumes, agency duty officers should be directed to evaluate assessment and response options based on expectations/ requirements for plan holders.

From the Northwest Area Contingency Plan (NWACP):

Section 1120: Washington State
"The NWACP has been adopted as [Washington] state's Oil and Hazardous Substance Spill Prevention and Response Plan as required by statute (see Chapter 90.56.060 RCW)."

***Section 1542**, Washington Response System states that the WDOE:*
"Assumes responsibility for incident management and cleanup if the responsible party is unavailable, unresponsive or unidentified."
"Coordinates spill response with other state and federal agencies and tribal and local jurisdictions using the National Interagency Incident Management System (NIIMS) model of Incident Command System (ICS)."

***Section 1760**, Responsible Party Policy, under the heading Requirement for a Full and Rapid Response states:*
"adequate response resources must be rapidly mobilized if initial source control, containment and cleanup efforts are to be successful. … Therefore, it is the policy of the Northwest Area Committee that the response to a spill incident should be promptly "ramped-up" to provide adequate equipment and trained personnel to effectively respond to the highest quantity of product that will most likely be

The duty officers next spoke at 0800, one half hour after sunrise, and at that time neither agency had observers staged or deployed in the immediate spill area. Even though there was thick fog in the morning, not having the resources ready in the field caused a further delay in the response. This delay would not be acceptable performance under the "full and rapid response" requirements mandated in the NWACP for a responsible party.

Lesson: Initial Assessment Logistics

If observations are to be conducted at first light, logistics must be set in motion well before dawn to ensure that the trained observers and appropriate platforms are in place and prepared to operate in the response environment as soon as sufficient light is available.

Success: Federal, state and local agencies and contractors have identified response equipment, vessels and aircraft which are pre-staged throughout the Northwest region and have this information available on the internet.

Recommendation: Response times and capabilities for available assessment and recovery resources should be documented in a readily accessible format, including the transit time for equipment and the response times for needed crew.

Recommendation: All agency duty officers should be familiar with use of the above referenced response resource data and take appropriate steps to activate needed resources with sufficient lead time to ensure availability on-site well before planned observations or recovery operations.

All federal and state mandated initial notifications were carried out in accord with standard policies of the agencies involved. The lead agencies (USCG/MSO Puget Sound and WDOE Spills Program) received the NRC notifications and responded quickly. They each independently contacted the source of the report and then contacted each other to ensure notification and coordination. Their unified decision to continue monitoring for additional reports, seek input via the VTS and plan on a trained assessment at first light, delayed not only the assessment but also the notifications, call-outs and initial response actions.

Lesson: Initial Notification

Identification and initial notification of potentially impacted jurisdictions are vital to establish links for potential assessment support and future response coordination efforts. In a mystery spill with an unidentified responsible party, WDOE "assumes responsibility for incident management" and should react in accord with the expectations of a responsible party from a regulated vessel or facility. In dealing with a mystery spill, the responders must be aware of the potential ramifications of the unknowns in terms of delaying notifications.

Success: After observations verified the spill, WEMD and WDOE personnel independently notified Tacoma, King County and Pierce County contacts on the morning of the 14th.

Recommendation: Develop protocols establishing the responsibility for making the regional/local notification calls, which should be clearly designated among the various state and federal agencies involved in the existing spill notification system (i.e. WEMD, WDOE, USCG, USEPA, USFEMA, USATSDR, etc.). Consider revising the NW Area Contingency Plan to reflect these protocols and mandate early notification of local jurisdictions in the case of true mystery spills.

Recommendation: Regional notification lists (or the notification matrix referenced in the WDOE Operations Manual) should be developed with clear identification of designated contacts in each jurisdiction. These lists/matrices should include regional, county, tribal, city, and community governments and large property owners (e.g. Olympic National Park, the US Navy, Washington State Parks, etc.). Ideally, these lists would be dynamically defined based on the specific geographic area of potential impact (either from the spill or from the response). Consider using a "burst" messaging system to activate the call list and point them to web site or email notification.

Recommendation: A designated contact person or position should be identified for each entity to be notified, and these contacts should be verified and tested at least semi-annually to ensure that notification and coordination will be efficient in the event of an actual incident.

The initial assessment of this mystery spill was delayed until first light by mutual agreement of the duty officers, and further observations were hindered by darkness and then by fog. Personnel

safety must be and is a primary concern when response agencies and contractors consider putting people into the field. Professional responders are very aware of the dangers inherent in their work and are trained to put safety first while conducting needed observations and operations. They know their available resources and are aware of the operational envelope both in terms of limitations and capabilities. This applies to operating in the dark or fog, working in shipping lanes or near shore, in small boats with limited radar visibility or larger vessels outfitted for night operations in limited visibility. Many of these response vessels also have sensors which can detect the presence of toxic or explosive substances in the atmosphere, which is particularly important in dealing with an unknown product. Likewise, professional aviators operate within known limits and constantly evaluate environmental and flight parameters focused on safe operations.

Lesson: Initial Safety Consideration and Documentation

Safety considerations are second nature to professional responders, and are not usually noted in logs or records of decisions, which can hide these considerations from the uninformed.

Success: The responders to this incident gave safety considerations the highest priority.

Recommendation: Responders should record safety concerns involved in response decisions even though they may seem obvious.

Lesson: Alternate Initial Assessment Methods

Alternate methods need to be explored for rapidly assessing the spill situation and evaluating the information received.

Success: When faced with limited visibility and grounded helicopters on the morning of the 14th, the Coast Guard and WDOE responders contacted teams with locally available vessels, used ferries as observation platforms, drove to potentially impacted beaches and innovatively addressed the weather problems.

Recommendation: Consideration should be given to contacting local emergency responders (fire or police stations) to request a rapid and simple assessment of the presence or absence of oil. Either report can be valuable information in the initial scoping assessment.

Recommendation: Establish a direct emergency link to the Washington State Ferry system to allow the use of these vessels and their trained crews as observation platforms of opportunity while operating on their normal routes. Again, a negative (no oil) report is an important data point if it is known that the crew was aware and looking for a possible oil spill.

Recommendation: While the use of volunteers during clean-up operations can be problematic and potentially unsafe, a network of volunteer "coast watchers", trained to differentiate oil from other sea-surface phenomena, could be a significant resource for early detection and assessment. It is recommended that a cadre of local volunteer "coast watchers" be actively recruited through public service, community center and press announcements, and that training classes be developed and conducted in the communities.

Recommendation: Develop a standard list of questions to be answered by field observers, including questions targeted at evaluating the credibility and experience of the observer. This list should include odor as well as visual characteristics.

Initial Incident Command

With the confirmation of oil on the water, both agencies began calling out contractor resources, and directing field resources while coordinating from different locations via phone links. The Unified Command came together and began managing the response from a single command post at approximately 1800 on the 14th at the Tacoma Fire Department training facility.

A responsible party would have been expected to recognize the reported spill as an incident, designate an IIC and put a response team in place right away. A responsible party would also be expected to manage a coordinated initial attack and track the initial response on an ICS-201 for the transition to the IC/UC at a briefing called for that purpose. In this incident, there was neither a designated Initial Incident Commander (IIC) nor a recognized initial response coordination organization to direct the notifications, assessments and the initial response. This IIC function is described in standard ICS and DRILLTRAC training as using the ICS-201 to track the initial response.

The IIC and staff would have managed the response in the field until the UC/ICS structure was in place at the ICP and command was transferred to the IC/UC in an ICS-201 briefing. In the case of the Dalco Passage mystery spill, the IIC and staff would have begun providing field command and coordination functions at approximately 0800 (or at 0300 if the response had been launched during the 0200 call.) The 201 Briefing and hand-off to the UC/ICS would have been about 1800 on the 14th when the ICP was established and staffed with Coast Guard and State personnel prepared to assume the management of the response within the ICS and the Unified Command structure. Without this Initial Incident Command structure in place, there were additional delays in the efficient field response caused by lack of coordination and common communications.

Lesson: Initial Incident Command & Coordination

In the responsibility vacuum of a mystery spill, it is crucial that a clear incident command structure be established immediately to coordinate the assessment, and to manage the call-out and direction of any needed on-water and/or on-shore response resources.

Success: On the morning of the 14th, WDOE, WDFW and Coast Guard personnel responded quickly and coordinated activities both in the field and among the command staff at their respective office locations.

Success: WDOE immediately activated the response Situation Room in Lacey, dispatching state resources including the Mobile Command Post (MCP). The MCP was initially set-up at Point Defiance, where it functioned as a communications center for the widely distributed initial state response teams.

Recommendation: In responding to a mystery spill without a responsible party, it is crucial that an Initial Incident Commander (IIC) be designated as soon as it is recognized that a field assessment and response will be required. The federal and state response agencies will need to agree on this assignment. For the additional Initial Response management staffing described below, the IIC should be able to draw upon personnel from other agencies and contractors as best suited.

> As outlined in the Initial Response section of the DRILLTRAC manual, the IIC would manage the field response, while a Unified Command structure and the Incident Command Post (ICP) are identified and established. To do this, the IIC would need to establish a forward command post and communications with the deployed field units from all agencies and contractors.
>
> One of the first considerations of the IIC would be the appointment of an Initial Safety Officer to evaluate the health and safety threats to the public and responders, and to develop a brief initial site safety plan focused on immediate and planned field actions.
>
> In the case of a rapidly developing response like the Dalco Passage Mystery Spill, the IIC would also designate an Initial Operations Chief (IOps) who would focus on the coordination of deployed resources, regardless of how and by whom they were ordered. It would be the responsibility of the IOps to establish communications with all field deployed resources and to provide direction and coordination of all field efforts. The IOps would ensure that all resources were communicating in accord with a pre-established Initial Response Communications Plan (see note on page 17).

With an Initial Safety Officer and IOps in place, the IIC would next designate an Initial Planning Chief to begin tracking the spill and the response, utilizing the ICS-201 form to track actions taken (page 2) and resources on-site or ordered. The ICS-201 form can be updated in preparation for the transfer of command functions to the Unified Command and the ICP.

As mentioned in a later recommendation, the immediate assignment of an Initial Public Information Officer would facilitate the dissemination of accurate information.

Recommendation: WDOE should identify and train an internal Initial Incident Command team to manage the response to mystery spills in the field through the transition to the IC/UC. Alternately, WDOE could consider contracting with response management organizations to cover the initial response to mystery spills. It is important to note that the Coast Guard has stated in the NWACP that they may choose not to field an initial incident team [see NWACP note in side-bar].

From the Northwest Area Contingency Plan (NWACP):

Section 1712: Coast Guard Policy

"The Coast Guard may elect not to dispatch representatives to reported discharges where representatives of another cognizant government agency are responding."

Recommendation: [While WDOE staff has participated in numerous drills and spills, most are focused on managing the response after the Initial Response Phase. Because we respond the way we drill, we should drill the way we want to respond.] Using mystery spill scenarios, WDOE should conduct joint Initial Incident Response Drills with the Coast Guard to identify staffing and to instill familiarity with the needed rapid response processes and tools required for effective initial response management.

Lesson: Use the ICS 201 Process

Without the designation of an initial Incident Commander and Staff, the WDOE and Coast Guard teams working in their independent command posts directed the initial response. When they convened at the Tacoma ICP, they launched directly into the transition phase of the Incident Command System (ICS) without having compiled the initial response information on the ICS-201 form or conducting an ICS-201 briefing.

Success: The WDOE Operations Section and Planning Section Chiefs moved immediately to using ICS-215 Operational Planning Worksheets for tracking ongoing operations and planning future operations. The completed ICS-215's were posted on the wall in the command post next to the Resource Unit display which facilitated the ability to quickly react to changing spill conditions.

Recommendation: In a mystery spill response being managed by an IIC from one of the responding agencies, the ICS-201 form should be used to track the initial response and to capture all the response resources on-scene and enroute.

Recommendation: The use of the ICS-215's to track the initial response through the transition period and to carry forward the Operations planning into the transition phase worked well and should be documented and implemented in future responses.

Lesson: Initial Response Resource Activation

Once field observations and reports confirmed the presence of oil on the water in Dalco Passage and along the shores of Maury and Vashon Islands, response and recovery resources were activated quickly by both WDOE and the Coast Guard. The appended chronology documents these "call-outs". While contractor resources responded quickly once activated, they would have been able to identify, deploy and direct resources to arrive on-scene earlier, if they had been notified of the potential response before the spill was confirmed.

Success: On the morning of the 14th, WDOE personnel activated Clean Sound Cooperative resources and the Coast Guard activated NRCES and Global Diving & Salvage resources. In all cases the clean-up contractors responded quickly, getting vessels, shore crews and support staff and equipment on-site within hours.

Recommendation: Even without a clear estimate of the volume, location or type of product, agency responders should alert contractor recovery and protection resources of a potential response, allowing time for the assessment of capabilities and potential launch of resources.

Recommendation: Persons placing orders should record the ETA of all resources mobilized and an on-board or assigned contact person with her/his phone number or radio frequency.

Recommendation: The ICS-201 form should be used to track activated resources during the initial call-out and response.

Lesson: Initial Response Communications

Without a clear Initial Incident Command structure, contractor resources arriving in the spill area did not have a clear communication plan or command structure to give direction.

Success: Contractors and other field personnel worked cooperatively to establish field communications and coordinate on-water and on-shore resources with aerial observers.

Recommendation: A default Incident Radio Communications Plan (ICS-205) should be developed and incorporated into the NWACP. This plan would clearly identify radio frequencies to be used by initial responders for on-water, on-shore and air operations, as well as command and emergency frequencies.

Lesson: Initial Public Information Officer

Initial news releases went out without the appropriate and required Unified Command approval. All press releases are to be cleared through the Unified Command, or through the Initial Incident Commander if the Unified Command has not convened.

Success: The WDOE and Coast Guard public affairs staff communicated with each other early in the response to coordinate releases. When the ICP was established, the Joint Information Center (JIC) staff were able to set up and operate a functional JIC at the Tacoma Fire ICP.

Recommendation: A template for a generic first press release should be developed and circulated among the potential state and federal Unified Command staff for input. While all press releases will still need to be approved by the incident-specific Unified Command, this would allow for quicker processing and approval of the first release.

Recommendation: Additional trained public affairs personnel should be deployed immediately both to the command post JIC and into the field. The additional staff at the JIC are needed to help with the initial surge of media interest at the beginning of the incident. The field-deployed JIC staff can provide direct support to the media representatives in the field, scheduling and

facilitating interviews rather than having them referred back to the JIC or potentially disrupting clean-up operations. This field deployment of JIC staff should continue as long as there is the potential for media personnel at the field sites.

Lesson: Liaison Follow-up

Once notifications have been made, it is important to provide a forum for an on-going communication of situation status and potential resource needs with the notified jurisdictions.

Success: The Liaison and JIC staffs did interact with other jurisdictions during the initial response phase and afterward.

Recommendation: When an Initial Incident Command structure is established, the Initial Liaison Officer (ILO) position should be assigned and the ILO should be provided with a copy of all notifications made or attempted by any of the involved agencies. The ILO or staff should then facilitate conference calls or meetings with designated representatives to provide a venue for regular updates and briefings, and for the coordination of resources within the response. This function should transfer to the Liaison Officer and staff when the UC is set up.

Recommendation: The Liaison Officer's staff should proactively contact potentially involved NGO's to inform them of the situation and establish the appropriate contact within the ICS.

Lesson: Estimating Spill Volume

Volume estimates based on observations of oil in the environment should not normally be accepted unless they are confirmed by valid mass balance computations beginning with a recognized total potential amount released. However in the case of a mystery spill, there is no known potential and no known source to allow any computation of the volume remaining and the volume released. Estimates of spill volume based on observations of floating oil are inherently inaccurate and should only be reported as a range of values within the confidence limits of the observer, visibility, the variability of oil thickness and the estimation of size and percent of area covered. These variables can lead to realistic estimates that may range from an order of magnitude (e.g. 20 to 200 gallons), to a simple multiplier (e.g. 1000 to 2000 gallons), or a range of confidence (e.g. 1500 gallons plus or minus 500 gallons). Reporting observed volume as

ranges, with implicit or explicit confidence limits, can also help the media and others better understand the inexact nature of the estimation process. A more detailed discussion of this topic in available in the NOAA report "Aerial Observations of Oil at Sea" which can be found at: http://response.restoration.noaa.gov/oilaids/OilatSea.pdf

Success: The JIC and others consistently reported the volume as an estimate.

Recommendation: Responders should be trained that all spill volume estimates should be reported as a range of values, and that no estimates of spill volume should be released without the approval of the Unified Command, or the Initial Incident Commander if the UC has not been established.

Lesson: Alternate Observation Methods

Specific desired observation platforms and personnel may not always be available or able to be used.

Success: As previously mentioned, when faced with limited visibility and grounded helicopters on the morning of the 14th, the Coast Guard and WDOE responders contacted teams with locally available vessels, used ferries as observation platforms, drove to potentially impacted beaches and innovatively addressed the weather problems.

Recommendation: Activate all observation resources including contractor resources right away, no matter which one is considered to be primary. This could include helicopters, contractor boats, ferries, onshore observers, and any vessels of opportunity operating in the area.

Incident Management and Area Planning

In any response, there are more general lessons to be applied in planning for a more efficient and effective response. The following lessons and recommendations are directed at mounting a more effective and efficient response.

Lesson: ICP Identification

During the Initial Response Phase, the Coast Guard and WDOE were managing the response remotely and coordinating field efforts from their respective offices and through staff deployed in the field. It took time to identify and set-up an ICP site and accomplish the transfer of command functions.

Success: The field teams, deployed response resources and office command staff were able to coordinate their efforts through the use of cell phones, radios and ad-hoc meetings.

Recommendation: To whatever extent possible, prospective Incident Command Posts should be identified, usage agreements put in place, site layouts developed, maps and directions copied and, if appropriate, equipment and supplies cached, to facilitate the rapid designation and set-up of the ICP during a response.

Recommendation: WDOE should identify an ICP set-up team including computer and communications technicians to prepare the designated ICP for operations. This team should be dispatched to the ICP as soon as the decision is made to use it. This team might also be used to take the Public Affairs trailer if it is needed. When the set-up team certifies that communications and computer networks are up and working, the SOSC can coordinate the smooth shift of staff to the new ICP. The staff shift should take into account the need to maintain a capably staffed command location during the physical transition, and the need to clearly define when the command function changes locations.

Lesson: Observers in the Field

In the initial response and assessment, it is important to field as many trained observers as possible.

Success: State and Coast Guard personnel went into the field and onto the islands, which led to interaction with the on-shore and on-water clean-up personnel and allowed for immediate coordination and direction.

Recommendation: Identify a cadre of trained Shoreline Clean-up Assessment Team (SCAT) personnel and put them in the field with the clean-up/recovery crews to shorten the feedback loop between Operations and Planning.

Lesson: SCAT & Ops in the Field

Coupling field cleanup observers with contractors on the beaches worked well to provide immediate feedback concerning clean-up priorities.

Recommendation: SCAT/Field Observers should be detailed right away to work in the field with the clean-up crews, providing the command post with real-time observations of both the spill and the response, as well as providing clear direction and monitoring progress of the field efforts.

Lesson: Plan & Staff for 24/7

State and federal response management personnel were forced to operate with minimal sleep, which impacted their efficiency, if not their effectiveness.

Success: Due to the extensive experience and expertise of the Coast Guard and WDOE Command post personnel, they were able to produce complete Incident Action Plans.

Recommendation: Consider developing "mutual aid" agreements with local industry response management teams, which would allow this significant expertise to be used during responses to mystery spills without implying any corporate liability.

Lesson: Review GRP Strategies with Property Owners and Contractors

The implementation of GRP strategies should be factored into a larger consideration of most effective and efficient response actions, including time critical efforts to control the source, collect and recover oil, and protect private property.

Success: WDFW personnel were able to rapidly identify high priority GRP's which were communicated to the field units by noon on the 14th.

Recommendation: All GRP strategies should be reviewed with contractors to provide input concerning the feasibility and functionality of the proposed strategies, beginning with any strategies that call for the placement of more than 500 feet of boom.

Recommendation: State and federal response personnel should be encouraged to think beyond just the GRP environmental protection strategies, to include other potentially effective actions such as using available boom to encircle pockets of floating oil, implementing deflection and collection strategies, and protecting private or public property. Without responsible party or contract response management staff to advocate for these considerations, the implied priority of the GRP strategies can overwhelm other potentially more productive response actions.

Lesson: Incident Communications Center

Communications between the field and the ICP were at times a problem, and field reports were not always being relayed to both Operations and Planning section personnel as needed.

Success: The use of cell phones for one-to-one communications worked well both between field groups and between field and ICP staff. The use of designated radio frequencies for field communications also worked well once the specific frequency assignments were clarified.

Recommendation: An Incident Communications Center (ICC) should be established as described in standard ICS training and in DRILLTRAC. This ICC would be managed by the Communications Unit Leader within the Logistics Section and would act as the hub for all phone, radio, fax and other communications. ICC personnel would receive and route communications in the ICP and from the field. Implementation of an effective ICC would also address the problem of all calls being routed to the JIC, which is not designed to provide "operator" service to the response. The ICC staff would be trained in the use of phone and radio systems and appropriate protocols, and the use of ICS-210 and ICS 213 forms for routing and tracking communications.

Concluding comments

The recommendations and opinions expressed here are those of the reviewer and are based upon extensive previous response experience, a limited period of on-site observation during the Dalco Passage mystery spill response, a review of available documentation, participation in after-action debrief meetings, and discussions with responders. The WDOE, US Coast Guard, US Navy and contractor personnel involved in this response are capable and professional, and generally did an excellent job of responding to a challenging situation. They performed admirably in dealing with an unknown quantity of an unknown substance from an unknown source, melding together responders from multiple organizations into a safe, efficient and effective response team. This was accomplished while functioning in the normal emotionally and politically charged response management environment.

Abridged Chronology for Dalco Passage Mystery Spill

Compiled by the Washington Department of Ecology with input from the U.S. Coast Guard.

Note: This work is based, in part, on staff recollections. Although efforts were made to ensure accuracy, complete accuracy is not guaranteed.

Timeline:

13 Oct:

2333: Low low tide at 0.8

14 Oct:

0121: Coast Guard Vessel Traffic Service (VTS) received call from the tug YEOMALT reporting an oil spill; call is transferred to Coast Guard Marine Safety Office Puget Sound (MSO PS) Watch Officer. Initial information was taken and the call was then transferred to the National Response Center (USCG NRC) for official documentation.

0127: The USCG NRC takes report number 738305 from the tug operator. The report describes the incident as an "Unknown Sheen" affecting Commencement Bay. It lists the time of discovery as 0115 and the position of the incident as 47 degrees, 19' 7' north, 122 degrees 27' 45' west. The cause, quantity, and source of the spill are listed as unknown. The sheen is reported as 1000 feet long and 200 feet wide. It also shows notifications made to the Federal Emergency Management Administration, Region 10; the USCG Marine Safety Office for Puget Sound; and the Washington State Emergency Management Division.

0134: Internal Coast Guard MSO PS notifications begin.

0137: WA State Division of Emergency Management (DEM) receives fax # 738305 from NRC. Reports a 1000-foot by 200-foot sheen on Puget Sound/Commencement Bay. DEM log entry shows that Ecology was notified of the situation.

0140: MSO MEP duty officer calls reporting source (tug operator). Learns that tug transiting the area reported recoverable oil approximately 1 acre in size, although can't be sure of size. Location was northwest of "TC" buoy. When tug traveled toward Commencement Bay did not observe oil. Waters calm, visibility unknown.

0140: Ecology duty officer paged by DEM. DEM informs Ecology of NRC report of oil in Commencement Bay received at 0115. DEM passes on the NRC report as an unknown sheen in Commencement Bay, 1000' x 200'.

0143: Time Approximate. Ecology contacts reporting source. From notes of Ecology duty officer: "Heavy thick oil spill. Black oil covering at least an acre. First encountered at the TC buoy. Strong odor and was able to see it with the spot light.
Position: 47° - 19.717' N 122° - 27.457' . No source (of the spill) info. He (tug operator) is on the Tug Yeomalt. Was heading into the Hylebos." Ecology also recalled asking if the tug operator could

see other vessels, thinking one might be the source of the oil. The operator replied he could see no other vessels and that his radar was clear. (ed. Buoy TC is approx. 2 miles north of the mouth of Commencement Bay.)

0157: Ecology duty officer confers with MSO MEP duty officer. This was a general discussion about possible overflights, whose helicopters might be available, who might be launching boats, and possible places to meet. It was agreed that these actions needed to wait for daylight to be effective or until additional information became available. Agreed to see if any other reports come in.

0200: Internal Coast Guard MSO notifications and briefings continue. MSO requested VTS to relay any further reports of oil and record all vessels that transited the area. Coast Guard asks if any Coast Guard assets are in the vicinity of the report location to verify oil sighting, (none were available). MEP duty officer and Port Operations duty officer discussed other possible sources to verify oil report: Port of Tacoma container cranes and the potential use of the Forward Looking Infrared (FLIR) system.

0210: Internal DOE notifications continue. Ecology's Natural Resource Damage Assessment (NRDA) duty officer is contacted. Agree that Ecology could get helo up in the morning for further assessment.

0530: M/V RHODODENDRON leaves on normal operating schedule, transiting every 30 minutes. No reports of pollution from ferry.

0554: High tide 10.7 feet

0607: Tacoma Narrows Airport reports visibility of 0.2 miles in fog.

0653: Tacoma Narrows Airport reports visibility of 0.0 miles in fog. Zero visibility continues until 0953 when the report is 1.0 mile in mist.

0700: Coast Guard preparing to send out pollution investigators. Initial action plan is to depart for Point Defiance, confirm presence of oil and assess severity of discharge.

0714: Second spill notification received by the Coast Guard. Tug CATHERINE QUIGG confirmed oil slick in the vicinity of 'TC' buoy. Details of report relayed to Ecology Duty Officer.

0730: At 0730, a resident on Vashon Island noticed oil but apparently did not report it until early afternoon. Ecology's Environmental Reporting and Tracking System took the report at 1302. It says, "Oil slick there at 7:30. The tide is out and has left a black residue. The seagulls have black/dirty butts. The area smells very bad and of oil. There was a yacht anchored on beach all night that appeared to have a slick on the water, but the fog prohibited identification."

0735: Coast Guard MSO received third report of oil. Tug on-scene reports oil sighted in vicinity of Tahlequah ferry dock, no estimate of size. Details of report relayed to Ecology Duty Officer.

0745: Four Pollution Investigators depart MSO for Point Defiance.

0745: Time approximate. EMD contacts Ecology to report that the Coast Guard wants to talk on the phone to discuss the reports of last night.

0755: Internal Ecology notifications continue.

0800: Time approximate. Tug operator hits redial on his phone and calls Ecology. Operator reports he is off the ferry dock in the vicinity of Point Defiance. He is in heavy oil and has been for about one mile.

0800: Conference call between MSO and Ecology. Discussed status of spill reports. Assessment/response resources are discussed, in addition to Ecology contracting helicopter for overflight. USCG will

mobilize National Response Corporation Environmental Services (NRCES) Tacoma fast response vessel (FRV) to get "experienced" eyes on the water. Plan to rendezvous at Pt. Defiance.

0800: A resident of Vashon Island reports to Ecology the sighting of a possible diesel sheen that is ". . . covering Quartermaster harbor" between Vashon Island and Maury Island. He reports that the material smells very strong.

0800: King County reports to DEM the discovery of a possible spill of diesel fuel on the beach at Manzanita. Connected caller to Ecology.

Note: Ecology received 8 reports of oil from Vashon and Maury island citizens between 0820 and 1210. Reports continued to come in for the rest of the day and the next.

0810: Internal notifications continue. Ecology conducts conference call between two regional offices to discuss the several reports of "unknown material" in Puget Sound. Both regional offices will send staff to respond.

0810: Coast Guard receives report from a citizen on Vashon Is, near Tahlequah ferry dock. Silver sheen at shore and film on rocks.

0815: Ecology calls Northwest Helicopters to secure helicopter. Presently unable to fly due to zero visibility. Agree to try at 1000.

0815: Coast Guard requests NRCES for on-site assessment.

0822: Ecology contacts Washington Fish and Wildlife. The use of the agency's aircraft was considered, weather permitting, for an overflight.

0828: WA ST Ferries sends email alert to subscribers: "The MV RHODODENDRON is approximately 20 minutes behind schedule due to heavy fog." A second alert was sent at 1339 saying, "The MV RHODODENDRON is back on schedule."

0830: DOE Puget Sound Field Office contacts Washington State Ferry Supervisor and asks if they have any reports of oil in the Vashon Island area. Supervisor reports "no". DOE supervisor then asks to be called if any oil is sighted.

0830: MSO Pollution Investigators arrive at Point Defiance. Conference call with Ecology. Call to NRCES, agree to meet at Middle Waterway facility.

0835: Ecology contacted Tacoma Fire dispatch to discuss the use of the Tacoma fireboat.

0840: Ecology contacts Maury Island citizen to get firsthand report on oil observation.

0840: Ecology notifies King County Division of Emergency Management.

0846: EMD reported Tacoma Fire Boat will assist in looking for oil.

0848: Ecology contacts King County road supervisor regarding report of oil on east side of Maury Island. Report back is that no oil found there.

0858: Ecology contacts Pierce County Div. of Emergency Management.

0858: Tacoma Fire Department called Ecology and reported that the fog on Commencement Bay is too thick for safe operations of their boat.

0900: Coast Guard Pollution Investigators depart on NRCES FRV. Two Pollution Investigators return to Pt. Defiance to await rendezvous with Ecology.

0900: Ecology contacts Commencement Bay Keeper, and asks for a patrol of all waterways to assess the spill. The group reports that the fog is too thick to patrol by boat. Assessment is conducted by land instead. No oil is found.

0902: Page sent. Alert and warning center has received several calls reporting the sighting of a possible diesel spill on Puget Sound. Reporting points include Commencement Bay in Tacoma, Quartermaster Harbor at Vashon Island and the east side of Maury Island. These three points represent the potential of a large spill. State departments of Ecology, Fish and Wildlife, the USCG, Tacoma Fire, Pierce County and King Co notified and responding. Page sent to State EMD, Military Department, King and Pierce County DEMs and Tacoma DEM.

0905: Ecology calls Tacoma Emergency Management Office. Learns that fireboat turned back due to heavy fog.

0913: Ecology contacts USCG in the field. They are at Pt. Defiance and indicate they may take ferry ride to observe oil. Fog reduces visibility to 100 yards.

0920: Ecology responder arrives on Vashon Island to assess extent of oiling and assist in directing response.

0930: Ecology alerts Clean Sound Cooperative, Inc. of spill and possible need for them to respond.

0937: Ecology received another USCG NRC fax detailing the sighting of a possible diesel sheen in the water near Maury Island.

0940: Ecology mobilizes Clean Sound Cooperative. Calls out the Incident Management Assist Team and begins to assign Incident Command System positions to coordinate the response with the Coast Guard. Initially these include State On Scene Coordinator and Environmental Unit Leader.

0945: Ecology requests CSCI workboat for visual observation of spill.

0948: DEM logged entry from King County. They are evaluating how to respond.

0950: Coast Guard Pollution Investigators on water, attempt to verify report. Report extremely limited visibility.

1000: Ecology on scene with NW Helicopters at Olympia airport for over flight, but they still can't fly. Overflight is rescheduled for 1100.

1000: CSCI vessel BRANT dispatched from CSCI Tacoma base to conduct initial site assessment with air monitoring. Enroute to east side of Maury Island.

1005: Coast Guard on water verifies significant quantities of recoverable oil. Report back to MSO Puget Sound. Request to mobilize additional NRCES on-water recovery resources and raise the OSLTF ceiling. Request overflight as soon as visibility allows.

1011: Ecology learns that the Ferry Rhododendron is on the Pt. Defiance to Tahlequah run, and has not seen any oil. Ferry is experiencing delays due to the fog.

1017: Ecology received additional reports from DEM (NRC #738360 & NRC # 738366) from citizens reporting the unknown oil sheen on Vashon Island. These reports were originally taken by USCG NRC. The USCG NRC reports each contain the phrase "The incident was discovered on 14-OCT-04 at 0600 local time."

1030: Two Coast Guard Pollution Investigators depart on ferry en route Vashon Island to assess shoreline impacts.

1040: Ecology departs Olympia with response boat, headed for Pt Defiance marina.

1040: CSCI vessel PLOVER underway from Tacoma.

1110: Global Diving and Salvage called out by MSO PS under BOA.

1115: Ecology contacts City of Tacoma. No oil found on shores that were checked by the City.

1119: Commencement Bay Keeper reports to Ecology that there is thick fog at the south end of Maury Island.

1120: Ecology arrives at the Pt. Defiance marina with the response boat.

1139: CSCI activates Basic Ordering Agreement with USCG.

1140: Low tide – 3.7 feet

1147: CSCI BRANT encounters first sheen and begins air monitoring. Safe levels are encountered. Level D PPE determined appropriate. Sorbent material deployed.

1200 NRCES FRV #9 marks leading edge of oil approximately 1 mile North of Piner Point with orange buoys and notes the lat-long. Marco Class I skimmer and PacMan vessel launched to commence skimming in Quartermaster Harbor.

1208: Ecology and WA Fish & Wildlife depart via NW Helicopters from Olympia Airport. Still experiencing scattered fog, but lifting enough to proceed toward the spill.

1208 - 1400: Overflight begins survey at Nisqually Refuge then north along Puget Sound to Tacoma Narrows, where small patches of sheen were detected north of the Tacoma Narrows bridge. The oil was concentrated in Dalco Passage especially at the SE corner of Vashon Island and the SW and SE corners of Maury Island. A black band of oil could be see on Manzanita beach. Oil was also noted almost to Dockton in Quartermaster Harbor.

1215: Additional Ecology staff arrives at Pt. Defiance marina.

1226: CSCI vessel WIDGEON underway.

1230: Ecology's mobile command post arrives at Pt. Defiance. A helicopter landing spot is established.

1245: Global responders arrive and survey beach near Tahlequah Ferry Terminal.

1337: CSCI begins to contract for helicopter at the request of the Coast Guard (completed at 1430).

1413 First CSCI encounter with recoverable oil.

1430: Ecology staff arrives at south end of Vashon Island.

1430: NRCES beach cleaning supervisor takes the helicopter up for an assessment of Vashon and Maury Island for help in cleanup crew and skimmer placement.

1450: CSCI WIDGEON encounters recoverable oil at south end of Vashon Island.

1530: CSCI vessel CORMORANT underway.

1545: Global arrives at Manzanita Beach with crew and begins beach cleanup.

1630: CSCI vessel AVOCET underway.

1724: High tide – 11.4 feet

1749: All CSCI vessels working in vicinity of entrance to Quartermaster Harbor.

1815: CSCI vessel CORMORANT encounters recoverable oil at Pt. Richmond in Colvos Passage.

1823: Sunset occurs.

1930-2110: Field crews suspending on-water activity. Command post activity continued until 3 a.m. on Day 2.